Neossoptile distribution patterns of only 5 species of Thraupinae have been described (Table 3). Only 4 pterylae (coronal, occipital, scapular and spinal) are always present; they are all found on the upper parts. The occipital tract only has a constant number of 4/4 neossoptiles. Neossoptile numbers for wing and leg pterylae are extremely variable throughout the 5 species. This variability is found also in the natal down pattern of Tersininae, e.g. Tersina viridis (Collins 1973) and of other Emberizinae, e.g. Sicalis flaveola and Tiaris olivacea (Hatrison 1974), Sporophila finches (Collins & Kemp 1976) and Paroaria gularis (Collins & Bender 1977).

With regard to this extreme variability within the natal pterylosis, the neossoptile distribution pattern may prove to be a taxonomic character of limited utility. Only more extensive data on the natal pterylosis of neotropical passerines may reveal any real value in establishing taxonomic relationships.

Acknowledgements: I wish to thank Dr. C. T. Collins (California State University, U.S.A.) for commenting on this paper.

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## Morphometry, wing loading and food of western Darfur birds

by R. T. Wilson & D. M. Ball

Received 29 June 1978

Darfur is known ornithologically only from the pioneering work of Admiral Lynes (Lynes 1924–1925) and some minor publications by Madden (1934, 1935, 1946). Later books with references to Darfur draw, apparently in entirety, from Lynes (Cave & MacDonald 1955, Mackworth-Praed & Grant 1960). The opportunity presented by an 18 months stay in western Darfur was taken advantage of and an effort has been made to monitor changes in the environment, the distribution and the seasonality of the avifauna which have taken place in the last 60 years. Full results have not yet been analysed. This preliminary note presents some physical data and information on food for a number of Darfur birds. Nomenclature generally follows that of White (1961–1965).

In Table 1, linear measurements are all in millimetres, wing area in square centimetres, weights in grams. Wing area was calculated from a drawn

## TABLE I

Morphometry, wing loading and food of western Darfur birds.

Summor Sur M	0.352	0.355	0.245	0.405±0.012 0.394-0.418	0.408	o·239 /n).	908.0	0.764	0.848	0	0.730
ingram tant	314.6	643.0	128.8	\$87.9±32.53 \$\$7.5-622.2	3761	556.1 in Zalingei tow	1.261	391.8	408.9	1171.4; 1176.	6.9911
Weight of crop  gut contents	6.72	0	0.0	9.8±11.54 0.0-22.5	47	27.5 and bones (shot	19.9 ours).	7.5	5.1	0.1:9.6 0.	1.1
Total weight	342.5	647.0	128.8	) 597·7±27·21 580–629	2022	583.6 7 of rodent fur 2	217.0 parts (17.00 ho	9.668	s). 414·0	1175.0; 1177	0.8911
Wing area	972	1842	\$2\$	1470·3±26·39 1440–1488	4960 .	2324 ), small quantity	710 ted Orthoptera	\$22	:6) (10.00 hour: 488 10urs).		16·30 hours). 1600
Wing length	230	315	061	319.0±19.31 302-340	545 uidentified leaves	425 (?domestic fowl)	269 optera plus diges	991	otyledon seeds (2 165 on seeds (10:00 h		otyledon seeds (1 260
Tarsus length	83	98	49		100 s, bird's foot, ur	79 of largish bird	54 of seven Ortho	67	s seeds (30), dict 72 s and dicotyledo		ds and 40% dies 95 12.00 hours).
Bill length	55 o alate Isoptera.	ı6 zard.	12	$29.3\pm2.3$ $28-32$ ts, lizards, ortho	63 cales, bird bones	30 ligested remains	13 fiable abdomens	mi 16	icidae (14), grass 17 al hundred grass		t 60% grass see 19 10 (15) (
Species and Sex	Ardeola ibis  Q Food items: 300-40	Circus pygargus & imm. Food items: One liz	Accipiter badius	Melierax metabates 399 Food items: Roden	Haliaetus vocifer S Food items: Fish so	Milvus migrans S Food items: Well d	Falco timunculus 2 Food items: Identii	Francolinus clapperto	Food items: Formi	Numida meleagris	Food items: About 60% grass seeds and 40% d  Q  Pood items: Sorghum seeds (15) (12.00 hours).
	Bill length Tarsus length Wing length Wing area Total weight Weight of crop weigh	Bill length Tarsus length Wing length Wing area Total weight Weight of cropp weight weight of soft weight weight of soft weight weight. We weight weight weight weight weight weight weight weight wei	Bill length Tarsus length Wing length Wring area         Wing length Wring area         Total weight Weight of crop)         Ivel weight weight of crops           \$100 alate Isoptera.         \$3         \$230         \$972         \$42.5         \$27.9         \$14.6           \$100 alate Isoptera.         \$15         \$1842         \$47.0         \$4.0         \$643.0           \$100 alate Isoptera.         \$15         \$15         \$1842         \$4.0         \$643.0	Bill length         Tarsus length         Wing length         Wing area         Total weight         Weight of rop            55         83         230         972         342.5         27.9         314.6           400 alate Isoptera.         16         95         315         1842         647.0         4.0         643.0           12ard.         128.8         0.0         128.8         128.8	Wing length Wing area Total weight Weight of roop 1 total weight 230 972 342.5 27.9 314.6 315 1842 647.0 4.0 643.0 190 525 128.8 0.0 128.8 319.0±19.31 1470.3±26.39 597.7±27.21 9.8±11.54 587.9±32.53 302−340 1440−1488 580−629 0.0−22.5 557.5−622.2	Bill length Tarsus length Wing length Wing area Total weight Weight of rop   1vet weight loo alate Isoptera.    5	Bill length         Tarsus length         Wing length         Wing area         Total weight         Weight of rople           55         83         230         972         342·5         27·9         314·6           ard.         16         95         315         1842         647·0         4·0         643·0           ard.         12         49         190         525         128·8         0·0         128·8           29·3±2·31         92·7±7·57         319·0±19·31         1440-1488         \$80-629         0·0-22·5         \$77·5-622·2           1s, lizards, orthoptera.         545         4960         2022         47         1975           ales, bird bones, bird's foot, unidentified leaves, earth.         583·6         27·5         57·5·622·2           10         78         4360         2022         47         1975           10         78         4360         2022         47         1975           10         78         4860         27·5         556·1           10         79         4860         27·5         556·1           10         79         756·1         77·5           10         70         77·5         77·5	Bill length Tarsus length Wing length Wing area Total weight Weight of cropply 1 vet weight loo alate Isoptera.  16 95 315 1842 647.0 4.0 643.0 lizard.  17 49 190 525 128.8 0.0 128.8  29.3±2.31 92.7±7.57 319.0±19.31 1470.3±26.39 597.7±27.21 9.8±11.54 587.9±32.53 28-32 38-92 30.2-340 1440-1488 580-629 0.0-22.5 557.5-622.2 lizards, orthoptera.  18 49 4960 2022 47 577-622.2 lizards, orthoptera.  19 5 57.5-622.2 lizards, orthoptera.  10 42 425 4960 2022 47 1975 1975 1975 1975 lizards lizards of largish bird (Pdomestic fowl), small quantity of rodent fur and bones (shot in Zalingei tow tifable abdomens of seven Orthoptera plus digested Orthoptera parts (17.00 hours).	Bill length Tarsus length Wing length Wing area Total weight Weight of cropp 1 total weight of crops 230 972 342.5 27.9 314.6  and.  16 95 315 1842 647.0 4.0 643.0  and.  12 49 190 525 128.8 0.0 128.8  29.3±2.31 92.7±7.57 319.0±19.31 1470.3±26.39 597.7±27.21 9.8±11.54 587.9±32.53  29.3±2.31 92.7±7.57 319.0±19.31 1470.3±26.39 597.7±27.21 9.8±11.54 587.9±32.53  ales, bird bones, bird's foot, unidentified leaves, earth.  30 545 425 2022 47 1975  igested remains of largish bird (?domestic fowl), small quantity of rodent fur and bones (shot in Zalingei tow in the contract of the contract	Bill length Tarsus length Wing length Wing area Total weight Weight of roop 1 vet weight of and the leoptera.  5	Bill length Tarius length Wing length Wing area Total weight Weight of roop 1 vets weight of the length of the length Tarius length Wing length Wing area Total weight of the length of the length Tarius length Wing length Wing area 1 vets of 47°°° 1 vets weight of 47°°° 1 vet

Neotis denhami

o.855 Food items: Stomach contained tightly packed mass comprised of approx. 90% Orthoptera, 4% Coleoptera, 1% Arachnid, 5% unidentified.

292 292 303.1; 292.4 4.0; 17.5 301.1; 274.9 0.469; 0.496 Food items: Groundnuts in 3 birds, including complete shell, sorghum sugare in one bird, millet Pennicetum typhoides in one bird which had also eaten peanuts, 3 seeds of sesame Sesamum indicum in one bird having eaten groundnuts. The heavier female was in breeding condition on 0.549土0.08 0.464-0.633 337.3±57.08 303.5-403.2 9.1十2.72 6.8-12.1 346.4±56.49 312.0-411.6 632±59.09 566-680 225-231 228 士 3 36; 37(2) 12 ix. 1976 with 17 ovules. Columba guinea

20 Streptopelia (not including S. senegalenzis) were taken between Oct 1976 and May 1977. The principal breeding season appeared to be Nov (rainy season June-Sep): a male and female shot on 15 Nov both had crops containing pigeon's milk and the female had one developing follicle plus 17 ovules. Millet appeared to be the preferred food being found in 75% of birds, sorghum 60%, groundnuts 20%, maize 15%, grass seeds 10%; water melon, seame and Lablab niger 5%, earth 10% and snail shell in 5%; green leaves of the rainy season deciduous Aaaria albida were found in one bird and the crop of one contained approximately equal volumes of unidentified leaves and quartz and feldspar debris. Wing loading was

0.391±0.04 g/cm2.

0.342土0.064 0.363;0.345 0.343 0.433 0.424 117.6; 113.7 102.276.90 6.96 3.06 2.99 239.5 0.8±0.75 7.3;0.0 9.0 11.3 25 321 90.5 Food items: Crop of male contained sorghum. Female coming into breeding condition on 15 Jan 1977. 124.9; 113.7 17.0±1.0 19.3±1.16 154.0±1.73 303.0±23.30 103.0±7.30 16-18 18-20 152-155 284-220 05.8-170.4 2.89 250.8 344; 330 162 553 24 $\frac{24}{7}$  Food items: Pink and yellow caterpillars and yellow seeds (? *Elassus* sp.) 105 181 27 13 14 Streptopelia senegalensis Food items: Figs. Poicephalus meyeri Psittacula krameri Turtur abyssinicus Treron waalia

16–18 18–20 152–155 284–329 95·8–110·4 0–15 95·8–109·5 0·292–0·373 Food items: seeds of sorghum, millet, lentils, Acacia albida and Elassus: flesh of guava and mango. One female coming into breeding (15 ovules) on 15 Nov 1976.

Agapornis pullaria

not sexed. 16 17 153 388 99·8 0·0 99·8 0·257 Taken on Wadi Barci (13°00′ N, 23°00′ E) in Acacia albida woodland. Not mentioned by Lynes and possibly represents an extension of range.

[Bull. E		: 99(1)			18			30	
Wing loading	0.389; 0.531 ant tree), mango	not measured	0.245	not measured	0.247	0.192	0.308	0.208 0.184 n digested at 15.	0.239
Net weight	382-2; 520-3   drought-resist	unknown	83.6 9 ovules.	73.4	56.4	102.5	116.2	71.6 65.3 slytra) had bee rrifa) flower.	228.5
Weight of crop  gut contents	9·5; 1·2 (an introduced	not measured	snld (mm \$1)	7.3	6.0	0.9	0 0 4 4	0.6 1.0 (mandibles, e ( <i>Hibiscus sabda</i>	3.6
Total weight Weight of crop  gut contents	;91.7; \$21.5 t, <i>Elassus</i> leaf	135.4	85°5 loping follicle	80.7	57.3	102·5 104·2 ra.	116.6	72.2 66.3 chitinous parts and 1 rosella (	234·I
Wing area	Crinifer zornurus 32; 31 49; 52 251; 249 1007; 979 391.7; 521.5 9:5; 1.2 382.2; 520:3 0:389; 0:531 249 249 1007; 979 391.7; 521.5 9:5; 1.2 382.2; 520:3 0:389; 0:531 249 249; 52 251; 249 1007; 979 391.7; 521.5 9:5; 1.2 382.2; 520:3 0:389; 0:	not measured	Oths scops 345 85°5 119 20 129 345 85°5 119 85°5 Pool items: Mushy insect remains and gravel. Taken at dusk 19 Apr 1977. One developing follicle (15 mm) plus 9 ovules.	not measured	228	Coracias abyssinica 28 20 162 533 \$\frac{2}{2} 26 153 493 \$\triangle \triangle \tria	378	Phoeniculus purpureus 56 29 140 347 72.2 0.6 71.6 0.208  \$\frac{3}{4}\$ 66.3 1.0 65.3 0.184  \$\frac{5}{4}\$ 60.3 1.0 65.3 0.184  \$\frac{5}{4}\$ 60.4 items: Male had taken only Coleoptera, 3 Hemiptera, 1 Diptera larva and 1 rosella (Hibiscus sabdarrifa) flower.	978
Wing length	251; 249 2aves. The othe	178	129 ken at dusk 19	145	112	162 153 118ht 3 Orthop	180 175 Coleoptera.	140 140 Il of which wit ptera, 3 Hemipi	233 of ants.
Bill length Tarsus length	49; 52 lava fruit and le	\$2	20 and gravel. Ta	18 Alestes sp.	17	20 26 o hours, had c	23 25 formicids and	29 27 7 Coleoptera, a ptera, 3 Dermal	44 olus hard parts
Bill length	32;31 had eaten only gr optera.	sis 28	11 hy insect remains	52 recently caught	s e Formicidae.	28 25 iale, taken at 15.0	rus 19 18 1 birds had eaten	reus 56 40 Ie had taken only ad eaten 1 Orthol	92 A Food items: Large yellow seeds plus hard parts of ants.
Species and Sex	Crinifer zornurus 2007 Food items: One I	Centropus senegalensis not sexed.	Otus scops Q Food items: Mush	Ceryle rudis 52 Tood items: One recently caught Alestes sp.	Haltyon senegalensis 4 Food items: Alate Formicidae.	Coracias abyssinica \$\frac{\partial}{\partial}\$ Food items: Female	Eurystomus glaucurus  19 23 17 7 18 25 175 Pood items: Both birds had eaten formicids and Coleoptera.	Phoeniculus purpureus \$ \$ Food items: Male ha hours. Female had ea	Tockus nasutus S Food items: Lar

т	,
ш	ĸ

0.451 stic beads, Breeds	0.123	50.3;43.4 1.2;0.3 49.1;43.1 0.160;0.170	0.147	
2904 tly coloured pla	42.3	49.1;43.1	54.3	
136 es and 12 brigh	9.0	1.2;0.3	9.0	
3040 optera, milliped	42.9	50.3;43.4	54.9	127.7
6434 groundnuts, Orth	344	314; 245	o hours.	
555 ass of sorghum, §	110	132; 115	16 36 110 well digested unrecognisable Insecta at 16.00 hours.	171
180 ghtly packed ma	24	28; 31 coptera.	36 d unrecognisabl	171
Ducorpus apysinums (28 months) 178 180 555 6434 3040 136 2904 0.451 Food items: Stomach contained tightly packed mass of sorghum, groundnuts, Orthoptera, millipedes and 12 brightly coloured plastic beads. Breeds July, this one taken late Feb.	rs goertae 19 :ms: Ant and caterpillar.	ттопиры стытаты 2♀₽ Food items: Orthoptera and Coleoptera. Laniarus barbarus	ıgely	
pucoruu. 2 imr Food itr July, th	Mesopic Pood it	299 Food ite Laniarus	Food items: Las	not sexed.

Common in Zalingei (12° 54' N, 23° 29' E) in Mar and Apr: probably represents a northen extension of range. Stated categorically to be not present by Lynes and previously apparently recorded only as far north as Dilling (12° 03' N). 2分 2分 2分 53:55 72:69 379:345 1486; 1510 491·4; 501·0 4·4; 7·5 487; 493·5 0·331; 0·334 Food items: Groundnuts only in male; egg shell and bird embryo in one female (Zalingei town) and insects, fragments of bone and quartz grains in other. Corvus albus

0.308	0.265	0.230	0.216	0.112
733.9	8.79	33.8	6.6	9.9
1.11	1.0	5.0	0	1.0
745 rghum.	6.29	34.3	6.6	4.9
2407 fal had eaten so	256	147	43	59
400 to blood and of	11.5	16	57	51
82 nd in addition t	41	gı jı	17	13
Food items: Shot at slaughterhouse at Turdoides plebejus	od items: Insect remains. Bradornis pallida	9 Food items: Formicidae and mango fl. Estrilda bengala	Pood items: 10 grass seeds.  Lagonosticta senegala	of Food items: 50 grass seeds.
	t slaughterhouse and in addition to blood and offal had eaten sorghum.	0.1 67.8	slaughterhouse and in addition to blood and offal had eaten sorghum.  19 41 115 256 67:9 0.1 67:8  idae and mango flesh.  31 91 147 34:3 0:5 33:8	0.1 733.9 0.1 67.8 0.0 9.3

outline of one wing either by counting squares on graph paper or by using a gravimetric method, the resulting figure being doubled to obtain total wing area: wing loading, expressed as g/cm<sup>2</sup>, was determined as the net weight divided by the wing area. Where parametric data for a number of individuals of a species are available they are presented as the mean ± standard deviation and extremes of range. All data refer to adult, non-breeding birds, unless otherwise stated.

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(C)

## A further note on the status of Monticola pretoriae Gunning & Roberts, 1911

by T. Farkas

Received 14 July 1978

In his remarks on Monticola pretoriae, Clancey (1968) stated that this species is simply a well-marked race of Monticola brevipes. It seems that his opinion has been taken over without further examination of the available material, even

by Hall & Moreau (1970).

The fact that M. brevipes shows a well-marked seasonal dimorphism, the different stages of which had earlier been misconstrued by Sclater (1930) as morphs, was first described in detail by Farkas (1962), but Clancey evidently overlooked this paper. Later, in a paper on M. pretoriae (Farkas 1966), I chose the lack of seasonal dimorphism in pretoriae as the main evidence for the reinstatement of it as a good species; this also Clancey appears not to have taken into account.

Clancey (1968) describes 2 male 'intergrades', though it is not clear why he regards these specimens as such, nor is it stated at what time of year they were collected. Certainly, as Clancey describes, the 2 specimens show some white colour on their heads, concealed by blue-grey apices; but this only qualifies them, together with a third specimen from Kosterfontein in Western Transvaal, as adult males of M. brevipes in different stages of their eclipse plumage. The dry Griqualand West and adjoining areas of the Orange Free State are, in any case, outside the range of M. pretoriae as there is no suitable habitat in that area.